

Common names**Grain Amaranth,****Amaranthaceae****Scientific name*****Amaranthus caudatus*****Edible portion**

Leaves, Seeds, Vegetable,

**Description**

An annual plant which can be 2 m high and 45 cm across. The stems are angular and it can have a single stem or be branched. It is often limp in the upper parts. Plants are hairy at first but become smooth. Often they are tinged purple. Leaves are 2-4 cm long by 0.7-1.6 cm wide on a leaf stalk 0.5-1.5 cm long. Leaves can taper to a tip at the end. They can also thin towards the base. The veins are pale underneath. The flower clusters are in spikes on the side or top branches. The flowers are sometimes branched and can droop over. They can be 45 cm long. The fruit is oval. Seed are 1-1.3 mm across.

Distribution

A tropical plant. It can grow in warm temperate places. It cannot tolerate frost. Plants do best under high light, warm conditions and dry conditions. They need a well drained soil. Some varieties can tolerate pH up to 8.5 and there is some salt tolerance. It can grow in arid places. In the Andes it grows between 500-3,000 m above sea level. In PNG it grows best between 1,600 -2,400 m above sea level. It suits hardiness zones 8-11.

Found in:

Africa, Andes, Angola, Argentina, Asia, Australia, Bolivia, Cameroon, Canada, Central Africa, Central African Republic, CAR, China, Congo, East Africa, East Timor, Ecuador, Eritrea, Eswatini, Ethiopia, Europe, Gabon, Guiana, Guianas, Himalayas, India, Indochina, Indonesia, Kenya, Malawi, Malaysia, Maldives, Mozambique, Myanmar, Nepal, Niger, Nigeria, North America, Northeastern India, NW India, Pacific, Pakistan, Papua New Guinea, PNG, Peru, Philippines, Sao Tome and Principe, SE Asia, Sierra Leone, Sikkim, Slovenia, South Africa, Southern Africa, South America, Spain, Suriname, Swaziland, Thailand, Tibet, Timor-Leste, Turkey, Uganda, Vietnam, West Africa, Zambia,

Use

The leaves and young plant are eaten cooked. They are also used in stir fries and added to soups.

The seeds are ground into flour and used to make bread.

CAUTION: This plant can accumulate nitrates if grown with high nitrogen inorganic fertilisers and these are poisonous.

Cultivation

Plants can be grown from seed if the soil is warm. Seeds are small and grow easily. Cuttings of growing plants root easily. Amaranths are mostly grown from seeds. The seeds are collected from a mature dry seed head of an old plant. These dry flower stalks are stored and then the flowers rubbed between the hands over the garden site. Collecting the seeds is fairly easy by banging flower heads on a mat or piece of cloth then the rubbish can be blown out of this mixture by dropping it and blowing gently as it falls. The very small seeds of these plants are scattered over the ashes or fine soil in fertile ground. Some types are self sown.

Amaranthus seeds are very small. A thousand seeds weigh about 0.3 g. It is very difficult to sow such small seeds evenly over the ground. So there are a few different methods you can use to try and get the plants well spaced. One way is to mix the seeds with some sand and then when you sprinkle this along a row it will only contain a few seeds among the sand.

Production

Plants take 4 - 6 months from sowing to harvesting the seed, but up to 10 months in some Andean highland regions. Yields from 1-3 or 5 tonnes per hectare of seed are common. Yields of up to one kilogram of edible leaves have been harvested by pulling out plants from an area of one square metre. The young leaves or whole plants are eaten cooked. If plants are picked 3 or 4 times over 6-8 weeks then two kilograms of edible leaves can be harvested. From a plant that grows so quickly and is such good quality food this is a very high production.



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Nutritional Values

Amaranthus caudatus

Edible Part	/100 g edible portion	Moisture %	Energy KJ	Energy Kcal	Protein g	Provit A µg	Vit C mg	Iron mg	Zinc mg
Leaves dry		6.0	1034		28.8	33		23.2	5.5
Leaves		80	241	59	5.4			468	
Seeds					13				
Stem									



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